

**Lucy R. Stewart**  
Research Molecular Biologist, USDA-ARS  
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**EDUCATION:**

2009 Ph.D. *Plant Biology* University of California, Davis, CA. GPA 4.0/4.0.  
2002 B.S. *Plant Genetics and Breeding*, Brigham Young University, Provo, UT  
GPA 3.97/4.0, *Magna cum laude*, department valedictorian

**PROFESSIONAL EXPERIENCE:**

2009-current USDA-ARS Research Molecular Biologist. Wooster, OH  
2010-current Adjunct Assistant Professor. Ohio State University Plant Pathology  
2009 Postdoctoral Researcher, University of California—Davis  
2002-2009 Graduate Research Assistant, University of California—Davis  
2000-2002 Undergraduate Research Associate, Brigham Young University

**PEER-REVIEWED JOURNAL ARTICLES:**

[\* Corresponding author; students, technicians, and other mentees underlined].

- S. Jarugula, S. R. Charlesworth, F. Qu, **L. R. Stewart\***. *Soil-borne wheat mosaic virus* infectious clone and manipulation for gene-carrying capacity. *Archives of Virology* (2015) *In press*.
- M. C. Edwards, J. J. Weiland, J. Todd, **L. R. Stewart**, S. Lu. Orf43 of Maize rayado fino virus is dispensable for systemic infection of maize and transmission by leafhoppers. *Virus Genes* (2016) 52:303-307.
- L. R. Stewart\***. Sequence diversity of wheat mosaic virus isolates. *Virus Research* (2016) 213:299-303.
- H. Q. Miao, D. P. Di, A. H. Zhang, Y. G. Lu, L. Z. Tian, **L. R. Stewart**, M. G. Redinbaugh. Efficient inoculation of *Rice black-streaked dwarf virus* to maize using *Laodelphax striatellus* Fallen. *Journal of Phytopathology* (2015) 163:529-535.
- M. C. Edwards, J. J. Weiland, J. Todd, **L. R. Stewart**. Infectious *Maize rayado fino virus* from cloned cDNA. *Phytopathology* (2015) 105:833-839.
- G. Mahuku, B. E. Lockhart, B. Wanjala, M. W. Jones, J. N. Kimunye, **L. R. Stewart**, B. J. Cassone, S. Seygan, N. Johnson, E. Kusia, L. Kumar, C. L. Niblett, A. Wangai, A. Kiggundu, G. Asea, H. Pappu, B. M. Prasanna, M. G. Redinbaugh. Maize lethal necrosis (MLN), an emerging threat to maize-based food security in sub-Saharan Africa. *Phytopathology* (2015) 105:956-965.
- K. Morales, J. L. Zambrano, **L. R. Stewart\***. Co-infection and disease severity of Ohio *Maize dwarf mosaic virus* and *Maize chlorotic dwarf virus* strains. *Plant Disease* (2014) 98:1661-1665.
- L. R. Stewart\***, R. Teplier, J. C. Todd, M. W. Jones, B. J. Cassone, S. Wijeratne, A. Wijeratne, M. G. Redinbaugh. Viruses in maize and Johnsongrass in Southern Ohio. *Phytopathology* (2014) 12:1360-1369.
- B. J. Cassone, F. Cisneros Carter, A. P. Michel, **L. R. Stewart**, M. G. Redinbaugh. Genetic

- insights into *Graminella nigrifrons* competence for *Maize fine streak virus* infection and transmission. *PlosOne* (2014) 9:e113529.
- B. J. Cassone, S. Wijeratne, A. P. Michel, **L. R. Stewart**, Y. Chen, P. Yan, M. G. Redinbaugh. Virus-independent and common transcriptome responses of leafhopper vectors feeding on maize infected with semi-persistently and persistent propagatively transmitted viruses. *BMC Genomics* (2014) 15:133.
- B. J. Cassone, Z. Chen, J. Chiera, **L. R. Stewart**, M. G. Redinbaugh. Responses of highly resistant and susceptible maize to vascular puncture inoculation with *Maize dwarf mosaic virus*. *Physiological and Molecular Plant Pathology* (2014) 86:19-27.
- B. J. Cassone, A. Michel, **L. R. Stewart**, R. Bansal, R. Mian, M. G. Redinbaugh. Reduction in fecundity and shifts in cellular processes by a native virus on an invasive insect. *Genome Biology and Evolution* (2014) 6:873-885.
- L. R. Stewart**<sup>\*</sup>, P. A. Paul, F. Qu, M. G. Redinbaugh, H. Miao, J. Todd, M. A. Jones. *Wheat mosaic virus* (WMoV), the causal agent of High Plains disease, is present in Ohio wheat fields. *Plant Disease* (2013) 97:1125.
- L. R. Stewart**<sup>\*</sup>, M. A. Haque, M. W. Jones, M. G. Redinbaugh. Response of maize (*Zea mays* L.) lines carrying *Wsm1*, *Wsm2*, and *Wsm3* to the potyviruses *Johnsongrass mosaic virus* and *Sorghum mosaic virus*. *Molecular Breeding* (2012) 31:289-297.
- L. R. Stewart**<sup>\*</sup>, R. Bouchard, M. G. Redinbaugh, and T. Meulia. Complete sequence and development of a full-length infectious clone of an Ohio isolate of *Maize dwarf mosaic virus* (MDMV). *Virus Research* (2012) 165:219-224.
- L. R. Stewart**, V. Medina, T. Tian, M. Turina, B. W. Falk, and J. C. K. Ng. A mutation in the *Lettuce infectious yellows virus* minor coat protein disrupts whitefly transmission but not *in planta* systemic movement. *Journal of Virology* (2010) 84:12165-12173.
- J. Wang, **L. R. Stewart**, Z. Kiss, and B. W. Falk. *Lettuce infectious yellows virus* (LIYV) RNA1-encoded P34 is an RNA-binding protein and exhibits perinuclear localization. *Virology* (2010) 403:67-77.
- L. R. Stewart**, V. Medina, M. Sudarshana, and B. W. Falk. *Lettuce infectious yellows virus* encoded P26 induces plasmalemma deposit cytopathology. *Virology* (2009) 388:212-20.
- L. R. Stewart**, M. S. Hwang, and B. W. Falk. Two *Crinivirus*-specific proteins of *Lettuce infectious yellows virus* (LIYV), P26 and P9, are self-interacting. *Virus Research* (2009) 145:293-9.
- J. Wang, M. Turina, **L. R. Stewart**, J. Lindbo, and B. W. Falk. Agroinoculation of the *Crinivirus*, *Lettuce infectious yellows virus*, for systemic plant infection. *Virology* (2009) 392:131-6.

#### BOOK CHAPTERS:

- L. R. Stewart**<sup>\*</sup>, M. G. Redinbaugh, R. Louie. Diseases caused by viruses. In: *Compendium of Corn Diseases*, Fourth Edition. eds. D. G. White and G. P. Munkvold. American Phytopathological Society (2016).
- J. Singh, X. Zhang, **L. R. Stewart**, T. K. Mitchell, F. Qu. Role of double-stranded RNA-binding proteins in RNA silencing and antiviral defense. In: *Plant virus-host interaction: Molecular approaches and viral evolution*. Eds. R. K. Gaur, T. Hohn, P. Sharma. Elsevier (2014).
- L. R. Stewart**<sup>\*</sup>, B. Ding, B. W. Falk. Viroids and phloem-limited viruses: Unique molecular

probes of phloem biology. In: Phloem: Molecular cell biology, systemic communication, biotic interactions. Eds. G. A. Thompson, A. J. E. van Bel. Wiley-Blackwell (2012) pp. 271-292.

**L. R. Stewart\***, M. G. Redinbaugh, R. Louie, R. Diseases caused by viruses. In: Compendium of Corn Diseases, Fourth Edition. Edited by Don G. White, Gary P. Munkvold. St. Paul, Minnesota: The American Phytopathological Society. Book Chapter, Accepted 5/2012. Updates on emerging viruses accepted 1/2015. *In press*.

## REVIEWS:

**L. R. Stewart\***. Waikaviruses: Studied but not Understood. APSnet feature article (online only). American Phytopathological Society (2011).  
[www.apsnet.org/publications/apsnetfeatures/Pages/waikavirus.aspx](http://www.apsnet.org/publications/apsnetfeatures/Pages/waikavirus.aspx).

## SELECTED HONORS/AWARDS:

2011	USDA-ARS Midwest Area Summer Intern Mentor award, \$2000
2010	American Phytopathological Society Schroth 'Faces of the Future in Virology' award, \$400 travel
2008	I. R. Schneider UC Davis Virology student travel award, \$500
2008	American Society for Virology student travel award, \$400
2007	American Phytopathological Society I.E. Melhus Symposium award
2007-2007	UCD Professors for the Future program fellow, \$3000
2002-2003	UCD Biotechnology program first year fellowship, tuition costs
2001-2002	BYU Office of Research and Creative Activities scholarship
1998-2002	BYU full-tuition scholarship, 4 years

## FUNDED GRANTS (not including in-kind personnel funding):

2006-2007	University of California-Davis Proteomics Facility pilot project, <b>(\$2,000)</b>
2004-2007	University of California-Davis Jastro-Shields competitive graduate student research scholarships, <b>(\$4,000, three awards)</b>
2011	Midwest Area summer undergraduate research internship. Identified and trained minority student in Ohio maize virus survey project. <b>(\$2,000)</b>
2012	"Ohio Survey of Wheat Viruses" project with co-PIs Dr. Feng Qu and Pierce Paul funded by the Ohio Small Grains Marketing Program. <b>(\$23,300)</b>
2014-2016	"Assessing the Impact of Ohio Wheat Viruses" project with co-PI Dr. Pierce Paul funded by the Ohio Small Grains Marketing Program <b>(\$25,302 year 1; \$26,480, year 2)</b>
2015-2017	"Assessing the Impact of Ohio Wheat Viruses" co-PI with Dr. Pierce Paul funded by Ohio Agricultural Research and Development Center SEEDS Industry Matching Grant <b>(\$50,000)</b>

- 2015-2017 “Developing a dispersal model of viruliferous small brown planthopper (*Laodelphax striatellus*) vectoring plant viruses using ArcMap” Korean Rural Development Administration agreement with Drs. Kwang-Ho Kim and Peg Redinbaugh. (**\$120,000**)
- 2016-2019 “Defense suppression in model and crop plants through isoform specific targeting of PP2A by a conserved family of bacterial effector protein.” USDA-AFRI subaward, PI: D. Mackey, co-Is: J. Blakeslee, L. R. Stewart. (\$503,307, **\$20,000** to Stewart)

\* I also co-wrote a funded USDA-NRI research grant with Dr. Bryce Falk as a graduate student: *Crinivirus-encoded determinants of cytopathology, virus trafficking, and phloem-related biology* (**\$397,500**, 2007-2012).

### INVITED TALKS:

- 2016 “Virus populations associated with Maize lethal necrosis (MLN) in East Africa. Emerging Plant Disease and Global Food Security. March 24, 2016. Raleigh, NC.
- 2015 “Virus-hunting in plants using deep sequencing technology” and “Technical considerations for metagenomics with deep sequencing” at USDA-ARS Microbial Genomics, Biomics, and Metagenomics Workshop. Aug. 18-20, 2015, Athens, GA.
- 2015 “Corn-eating viruses and their vectors.” Plant Pathology seminar, Penn State University June 19, 2015. State College, PA.
- 2015 “Identification of candidate virus response and vector competence genes in the virus-transmitting leafhopper, *Graminella nigrifrons*.” Plant and Animal Genome conference Jan. 10, 2015. San Diego, CA.
- 2014 “Emergence of Maize lethal necrosis in East Africa”. To Animal and Plant Health Inspection Services scientists. Oct. 8, 2010. Beltsville, MD.
- 2013 “Corn and wheat viruses in Ohio.” 59<sup>th</sup> Soft Wheat Quality Laboratory Research Review Conference March 20, 2013. Wooster, OH.
- 2012 “Cracking waikavirus code: Progress on *Maize chlorotic dwarf virus*.” Plant Pathology Seminar, Sept. 11, 2015. Wooster, OH.
- 2010 “Using *Maize chlorotic dwarf virus* to explore future frontiers in plant virology.” Wooster Area Molecular Biology Association seminar, Oct. 22, 2010. Wooster, OH.
- 2010 “Functional assessment of plant virus genomes. . . LIYV to MCDV. Plant Pathology seminar. Jan. 12, 2010. Wooster, OH
- 2010 American Phytopathological Society annual meeting, Schroth Faces for the Future in Virology session. Aug. 10, 2010. Charlotte, NC.

### STUDENT MENTORING (since 2009):

#### Student Advisory Committee

- 2011-2012 Jasleen Singh. M.S. “Characterization of self-interaction of *Arabidopsis thaliana* double-stranded RNA binding protein 4.” The Ohio State University.

#### Graduate Advisor:

- 2015-current M.S. student Brian Hodge, “Assessing the impact of Ohio wheat viruses.” Co-advisor Dr. Pierce Paul, OSU.
- 2015-current Ph.D. student Deogracious Massawe, USAID-Tanzania.

Post-doctoral research advisor

- 2013-present Sridhar Jarugula. Center for Applied Plant Sciences. The Ohio State University, Wooster, OH.
- 2011 Md. Ashrafal Haque. Bangladesh Agricultural University. Islamic Development Bank postdoctoral fellow.

Research Associate advisor

- 2015-present Abdul Qadir. Diversity of Barley yellow dwarf virus isolates from Pakistan and USA. University of Agriculture Peshawar Pakistan.
- 2015 Lilian Gichuru. Co-advisor with M. G. Redinbaugh and D. Francis. Borlaug fellow.
- 2015 Chau Nguyen. Ho Chi Minh City Open University. Vietnam, Ho Chi Minh City. Borlaug fellow.
- 2014-2015 Sara Rovaris. Universidade Estadual de Londrina-UEL, Campinas, Brazil.
- 2013 Steven Roy Charlesworth. Development of monocot virus-induced gene silencing vectors. University of Edinburgh.
- 2011-2013 Katia Morales. The Ohio State University.
- 2012 Rachéle Teplier. University of Avignon and the Vaucluse.

Undergraduate research advisor

- 2015-current Anna Emmick. College of Wooster, Independent Study.
- 2015 Rey Cotto. University of Puerto Rico Mayaguez. Summer Research Opportunity Program scholarship recipient.
- 2014-current Benjamin Stromberg. College of Wooster intern, Independent Study.
- 2014-15 Keith Kitchen. North Central State College, Mansfield, OH.
- 2014 Eric Brenner. College of Wooster intern
- 2012 Kevin DeGroot. College of Wooster intern
- 2012 Stephen Ryan. College of Wooster intern
- 2011 Edgar Umanzor. College of Wooster. ARS Midwest Area Summer Internship Program scholarship recipient.
- 2011 Nicholas Spittle. College of Wooster intern
- 2011-2012 Yujing Zhao. College of Wooster. Senior Independent Study thesis, with honors: “Polyprotein processing in *Maize chlorotic dwarf virus*.” ORIP and COW Copeland Scholarship recipient.
- 2010-2011 Tyler Croxall. College of Wooster. Senior Independent Study thesis: “Exploring the synergistic interactions of *Maize chlorotic dwarf virus* in *Zea mays* and the possibility of a post-transcriptional gene silencing suppressor. ORIP and COW Copeland Scholarship recipient.

**TEACHING EXPERIENCE:**

2015 OSU General Plant Pathology virology guest lecture  
2014 OSU Agricultural Technical Institute plant viruses guest lecture  
2013 OSU Plant Virology transmission guest lecture  
2010-2015 College of Wooster research presentations  
2010-2012 Central State University careers in biology guest lectures  
2013-2015 OSU Diagnostics Short Course, virology guest lecture and/or lab  
2004, 2005 UCD General Virology reader  
2004, 2005 UCD Plant Physiology teaching assistant  
2003 UCD Introductory Plant Biology teaching assistant, laboratory sections

#### **SERVICE/OUTREACH ACTIVITIES:**

- Manuscript peer reviewer for: PlosOne, Journal of Virology, Journal of General Virology, Virology, Virus Research, Frontiers in Virology, Archives of Virology, Molecular Plant-Microbe Interactions, Plant Science, European Journal of Plant Pathology, Amino Acids, Phytopathology, Plant Disease, and Theoretical and Applied Genetics.
- Associate Editor, Phytopathology, term to begin 1/2016
- Community Science outreach programs including K-12 careers talks, Girls' STEM programs and training classes; at least one outreach activity annually
- OSU Plant Pathology Greenhouse/Phytotron committee member, 2012-present
- OSU Plant Pathology Seminar co-coordinator 2013-2014
- OSU Plant Pathology Annual Review Committee member 2011

#### **AFFILIATIONS:**

2010-present American Society for Virology (ASV)  
2011-present American Phytopathological Society (APS; Virology Committee Chair 2012)  
2015-present Sigma Xi  
2015-present Ohio Academy of Sciences